Response Caching Pros and Cons

Benefits of Response Caching

- Response Caching allows students to continue testing if the student's testing device loses connectivity to DRC but still has connectivity to the Testing Site Manager (TSM). In this event, student responses are routed to the TSM until connectivity to DRC is restored.
- Sites with less reliable Internet connections benefit from having Response Caching in place.

Limitations of Response Caching

- Response Caching does not help if there is a loss of local network connectivity between the student's testing devices and the TSM; for example, if the testing device loses its wireless connection.
  - Local network connectivity is where most testing sites experience issues
- Response Caching is not leveraged for Computer Adaptive Tests (CAT) or Speaking Tests.
  - These responses must go directly from the testing device to DRC for immediate processing for a CAT to advance
- To ensure test integrity, all responses must be tracked during the test session. Once a test session is started with Response Caching enabled:
  - In the event of an interruption, a test session must remain associated with the same TSM until the test session is completed. Each testing device is configured to a specific TSM. Therefore, any testing device the student uses to resume the test must be associated with the same TSM on which the session was started.
  - Resuming a test session after an interruption (whether planned or unplanned) may require additional steps, including ensuring that all cached responses for the student's test on the TSM are sent to DRC
  - If a test session needs to be resumed on a different testing device/TSM combination:
    - To address the risk of possible response loss, test administrators must verify that all responses on the original TSM have been cleared and sent to DRC
    - DRC Customer Service must update the test session to allow it to continue on a different TSM
- Response Caching TSMs cannot be load balanced. Sites using load balancing Content Caching TSMs must configure separate Response Caching TSMs.

Recommendation

For most sites with stable Internet connections, we recommend NOT using response caching. This recommendation is based on the following:

- Lack of Response Caching streamlines the student experience when re-entering a test session
  - Test sessions can be resumed from any configured testing device
  - Students can continue testing without having to clear responses from the TSM
  - Removes the dependency between a test session and a TSM
- Response Caching was designed to address Internet connection loss
  - Internet reliability and availability have greatly improved in recent years
  - Over the last two testing years, less than 0.5% of response types that can leverage response caching have benefited from response caching
- Enhancements to DRC INSIGHT have improved response processing. For example, if connectivity is temporarily lost, the system tries multiple times to send responses, resulting in reduced test interruptions
- DRC INSIGHT has many built-in safeguards to maintain the integrity of responses, including:
  - Capturing and storing responses in DRC databases as students enter them
  - A "heartbeat" that sends a student's current responses to DRC at regular intervals
- Lack of Response Caching simplifies TSM load balancing for increased scalability
- Assessments using Computer Adaptive Testing cannot use Response Caching
- Sites using DRC's Site Technology Readiness Checklist benefit from improved availability of their testing environment
  - Wireless and other local connectivity issues are being addressed before testing starts

For these reasons, we recommend using Response Caching only for sites with unreliable Wide Area Network (WAN) and/or Internet connectivity.